**Why FIRST Robotics?**

Imagine if high school students had a quality math and science education that taught them not only textual concepts but also real world applications. What if these students learned to design a solution to a challenge with time and budgetary constraints WHILE working in a team of peers? Is this the type of student that you would want to hire?

FIRST Robotics provides this and much more experience for its high school participants. Each January, FIRST announces the game competition and then gives each team six weeks to build a robot to compete at the regional competition in the spring. Meeting 20-30 hours per week during build season, as a team, students first decide the game strategy their robot will use and then they design, assemble, program, test, and create the robot and its respective mechanical and electronic components. They prepare marketing materials to promote their robot at the competition. Students also learn to meet deadlines- the robot must be shipped on time (exactly 6 weeks after the game has been announced), meet weight and size standards, and must be produced within a materials budget (prepared largely with the input of student leadership and present resources). Real life lessons teaching real life skills.

The skills learned include ones needed in every organization: teamwork, communication, group decision-making. Others skills, however, are more technical: using computer aided design software, designing a transmission, machining gears, designing electronics, programming and using animation software. Some are marketing related: using graphics software, planning and budgeting, and preparing/giving oral presentations. One student remarked in her math class that a problem she was assigned was the same formula she had learned the day before that taught her how to understand and design a pneumatic system to shift the robot gears. Truly, it makes their studies come alive**!** ***A study by Brandeis University showed that 35% more FIRST Robotics team members go on to college than a peer group, and twice as many major in science or technology.***

Team mentors represent a wide variety of fields from engineers and business people to parents and professors who use their insights to work closely to help students move forward with their task. All the while the team follows a standard of conduct known as “gracious professionalism.” All major team decisions and interactions are evaluated as to whether they meet this standard. Thus, the climate of working together as part of a larger group to learn and confront challenges incites both excitement and curiosity.

**Team 1533 – “Triple Strange”**

Originally based at the Early College at Guilford, Team 1533-Triple Strange will participate in FIRST Robotics for the ninth year in 2012-2013. Though now a fairly seasoned team, the Team continually strives to achieve excellence and challenge the status quo. This past year, we made especially notable strides in improving communication. Through email, WikiGroups, our Facebook page, our website, and our Twitter account, our team keeps everyone involved in current activities. Constant updates let members know of new outreach and volunteering activities, progress on our robot, and future goals. Additionally, we have a web team that designs, codes, and updates our team webpage.

Our team expects to have approximately 40 - 50 students from 6-8 high schools from Guilford County. Besides all the activities surrounding the robot building and competition, the team also conducts ***educational and community service activities.*** Several team members each year volunteer by mentoring middle school level FIRST Lego League robotics teams. This year is Team 1533’s third year volunteering by providing afterschool tutoring and homework help at nearby elementary schools. Last year, Team 1533 spread the love of science and engineering especially far as it started its LEGO program geared towards elementary school students. Team 1533 recruited 22 students, both members and non-members, to volunteer two hours a week leading 11 groups of five to seven 3rd–5th graders in

a LEGO enrichment program based on FIRST’s Jr. FLL, thus promoting interest in STEM by encouraging students to design and build robots using LEGOs. With this activity alone, the team has volunteered over 1200 hours. Team 1533 has volunteered at numerous other community events to encourage involvement and funding for STEM activities, especially through FIRST.

**The Competition**

Regional competitions are comprised of 30-50 teams who compete in 2½ minute rounds. Teams compete as part of a three robot alliance (another level of teamwork), which changes each competitive

round. After preliminary rounds, the top teams choose alliances for the playoff rounds. Teams are also evaluated on areas including community service, helping other teams, educational activities, how well the team members interviewed understand how their robot works, and other criteria. Thus, the focus is not just on winning the competitive rounds, but having a well-rounded team that exhibits “gracious professionalism”.

**Timetable**

Fall 2012 Engineering, safety, and programming training, marketing preparations, FIRST Lego League Mentoring, elementary school volunteering

Jan-Feb 2013 Build season!

March – April 2013 Attend 2 Regional Competitions

April 2013 Attend International Championship in St. Louis, MO (if we qualify)

Summer 2013 School and sponsor presentations, robot maintenance, demo robot building

**Team Needs**

Team 1533 has been a successful learning experience for our students because of tremendous support from many community partners. Each year we need funds, materials, a place to build and store our robot, and engineering and non-engineering adult mentors. The entry fee for a regional competition is $5,000; $4,000 more to attend a second regional competition, and an additional $5,000 is required for Nationals. Robot parts, equipment, tools, marketing expenses, administrative costs, total about $12,500 more. The competition trips each cost approximately $5,000 for transportation, meals and hotel accommodations. Additionally, we lease a 1700 ft2 open room in a business park, centrally located in Guilford County to make this experience more accessible for students. Lease and utilities for this space is about $8000 for the year. Our total budget each year, dependent on number of students participating and competitions we attend, is between $30,000 - $40,000. Students are responsible for a portion of these costs through member dues and our Team Fundraiser selling FIRST - 7 Watt LED Light Bulbs. It is important that we make this activity accessible to all students, and so we seek sponsors to underwrite much of this cost.

**Benefits of sponsorship**

The greatest benefit is providing the students with a very practical learning experience – which is multiplied when they share what they have learned with younger students through community outreach by mentoring and providing robot demonstration presentations.

* Donors of $2000 or more - name and logo displayed on Team 1533’s robot and banner.
* Donors of $500 to $2000 - name and logo displayed on Team 1533’s banner
* All donors will be recognized on the website, team brochure, and team t-shirts, and announced at team gatherings.

ECG Robotics received tax exempt status from the IRS under section 501(c)(3), October 2010. Our EIN is 26-1397715. Tax deductible donations can be made to **“ECG Robotics”** and sent to:

**ECG Robotics, Inc., 624-D Guilford College Road, Greensboro, NC 27409**

For questions contact Cathy Gorton, Team Finance Mentor, email: [cathy.gorton@gmail.com](mailto:cathy.gorton@gmail.com)